**H.T No**

**Regulations:**

**A15**



**Sreenidhi Institute of Science and Technology**

(An Autonomous Institution)

**Code No: 5H213 Date: 16-Dec-2020 (FN)**

**B.Tech I-Year II-Semester External Examination, Nov/Dec - 2020 (Supplementary)**

**ENGINEERING MATHEMATICS – II (Common to All except BT)**

**Time: 2 Hours Max.Marks:75**

***Note: a****) No additional answer sheets will be provided.*

*b) All sub-parts of a question must be answered at one place only, otherwise it will not be valued.*

*c) Missing data can be assumed suitably.*

**ANSWER ANY 5 OUT OF 8 QUESTIONS. EACH QUESTION CARRIES 15 MARKS.**

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| --- | --- | --- | --- |
| 1. | a) | Solve the equations | [8M] |
|  | b) | Find the inverse of the matrix  by Gauss-Jordan method. | [7M] |
|  |  |  |  |
| 2. |  | Find Eigen values and Eigen vectors of the matrix | [15M] |
|  |  |  |  |
| 3. | a) | Find the general solution of the partial differential equation . | [8M] |
|  | b) | Reduce the differential equation  to the form  and hence solve it. | [7M] |
|  |  |  |  |
| 4. | a) | Find the Laplace transform of the periodic function  and . | [8M] |
|  | b) | Using convolution theorem, evaluate | [7M] |
|  |  |  |  |
| 5. | a) | Find | [8M] |
|  | b) | Using convolution theorem, determine the inverse- transform of | [7M] |
|  |  |  |  |
| 6. | a) | Determine the Fourier series for  in | [8M] |
|  | b) | Find the Fourier Transform of and hence evaluate | [7M] |
|  |  |  |  |
| 7. | a) | Solve   by Gauss elimination method. | [8M] |
|  | b) | Verify Cayley – Hamilton theorem for | [7M] |
|  |  |  |  |
| 8. |  | Apply Laplace transforms to solve . | [15M] |

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